

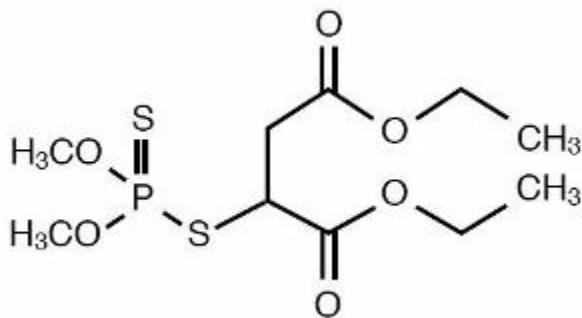
MALATHION LOTION, 0.5% - malathion lotion
Karalex Pharma, LLC, Woodcliff Lake, NJ 07677

Rx Only

For topical use only. Not for oral or ophthalmic use.

DESCRIPTION

Malathion Lotion contains 0.005 g of malathion per mL in a vehicle of isopropyl alcohol (78%), terpineol, dipentene, and pine needle oil. The chemical name of malathion is (\pm) - [(dimethoxyphosphinothioyl) - thio] butanedioic acid diethyl ester. Malathion has a molecular weight of 330.36, represented by $C_{10}H_{19}O_6PS_2$, and has the following chemical structure:



CLINICAL PHARMACOLOGY

Malathion is an organophosphate agent which acts as a pediculicide by inhibiting cholinesterase activity in vivo. Inadvertent transdermal absorption of malathion has occurred from its agricultural use. In such cases, acute toxicity was manifested by excessive cholinergic activity, i.e., increased sweating, salivary and gastric secretion, gastrointestinal and uterine motility, and bradycardia (see OVERDOSAGE). Because the potential for transdermal absorption of malathion from Malathion Lotion is not known at this time, strict adherence to the dosing instructions regarding its use in children, method of application, duration of exposure, and frequency of application is required.

INDICATIONS AND USAGE

Malathion Lotion is indicated for patients infected with *Pediculus humanus capitis* (head lice and their ova) of the scalp hair.

CONTRAINDICATIONS

Malathion Lotion is contraindicated for neonates and infants because their scalps are more permeable and may have increased absorption of malathion. Malathion Lotion should also not be used on individuals known to be sensitive to malathion or any of the ingredients in the vehicle.

WARNINGS

1. Malathion Lotion is **flammable**. The lotion and wet hair should not be exposed to open flames or electric heat sources, including hair dryers and electric curlers. Do not smoke while applying lotion or while hair is wet. Allow hair to dry naturally and to remain uncovered after application of Malathion Lotion.
2. Malathion Lotion should only be used on children under the direct supervision of an adult.
3. If Malathion Lotion comes into contact with the eyes, flush immediately with water. Consult a physician if eye irritation persists.
4. If skin irritation occurs, discontinue use of product until irritation clears. Reapply the Malathion Lotion, and if irritation reoccurs, consult a physician.
5. Slight stinging sensations may occur with the use of Malathion Lotion.

GENERAL

Keep out of reach of children. Close eyes tightly during product application. If accidentally placed in the eye, flush immediately with water. Use only on scalp hair.

INFORMATION TO PATIENTS

1. Malathion Lotion is **flammable**. The lotion and hair wet with lotion should not be exposed to open flames or electric heat sources, including hair dryers and electric curlers. Do not smoke while applying lotion or while hair is wet. The person applying Malathion Lotion should wash hands after application. Allow hair to dry naturally and to remain uncovered after application of Malathion Lotion.

2. Malathion Lotion should only be used on children under the direct supervision of an adult. Children should be warned to stay away from lighted cigarettes, open flames, and electric heat sources while the hair is wet.
3. In case of accidental ingestion of Malathion Lotion by mouth, seek medical attention immediately.
4. If you are pregnant or nursing, you should contact your physician before using Malathion Lotion.
5. If Malathion Lotion comes into contact with the eyes, flush immediately with water. Consult a physician if eye irritation persists or if visual changes occur.
6. If skin irritation occurs, wash scalp and hair immediately. If the irritation clears, Malathion Lotion may be reapplied. If irritation reoccurs, consult a physician.
7. Slight stinging sensations may be produced when using Malathion Lotion.
8. Apply Malathion Lotion on the scalp hair in an amount just sufficient to thoroughly wet hair and scalp. Pay particular attention to the back of the head and neck when applying Malathion Lotion. Anyone applying Malathion Lotion should wash hands immediately after the application process is complete.
9. Allow hair to dry naturally and to remain uncovered. Shampoo hair after 8 to 12 hours, again paying attention to the back of the head and neck while shampooing.
10. Rinse hair and use a fine-toothed(nit) comb to remove dead lice and eggs.
11. If lice are still present after 7-9 days, repeat with a second application of Malathion Lotion.
12. Further treatment is generally not necessary. Other family members should be evaluated by a physician to determine if infested, and if so, receive treatment.

LABORATORY TESTS

There are no special laboratory tests needed in order to use this medication.

CARCINOGENESIS, MUTAGENESIS, IMPAIRMENT OF FERTILITY

Although carcinogenesis, mutagenesis, and impairment of fertility have not been studied with Malathion Lotion, malathion has been shown to be genotoxic in a number of *in vitro* and *in vivo* mutation and clastogenicity assays. However, there was no evidence of a carcinogenic effect following long-term oral administration of malathion in F344 rats after 2 years feeding with up to 0.4% (# 200 - 400 mg/kg/day) nor was it tumorigenic in Osborne - Mendel rats or B6C3F1 mice after similar feeding for 80 weeks with 0.8% (# 400 - 600 mg/kg/day) or 1.6% (# 1,000 - 2,000 mg/kg/day), respectively. Based on body surface area, doses tested are approximately 4 to 40 fold greater than those anticipated in humans (assuming 100% bioavailability).

Reproduction studies performed with malathion in rats at doses over 180 fold greater than those anticipated in a 60 kg adult (based on body surface area and assuming 100% bioavailability) revealed no evidence of impaired fertility.

PREGNANCY

Pregnancy Category B. There was no evidence of teratogenicity in studies in rats and rabbits at doses up to 900 mg/kg/day and 100 mg/kg/day malathion, respectively. A study in rats failed to show any gross fetal abnormalities attributable to feeding malathion up to 2,500 ppm (# 200 mg/kg/day) in the diet during a three-generation evaluation period.

These doses were approximately 40 to 180 times higher than the dose anticipated in a 60 kg adult (based on body surface area and assuming 100% bioavailability). Because animal reproduction studies are not always predictive of human responses, this drug should be used (or handled) during pregnancy only if clearly needed.

NURSING MOTHERS

Malathion in an acetone vehicle has been reported to be absorbed through human skin to the extent of 8% of the applied dose. However, percutaneous absorption from the Malathion Lotion, 0.5% formulation has not been studied, and it is not known whether malathion is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Malathion Lotion is administered to (or handled by) a nursing mother.

PEDIATRIC USE

The safety and effectiveness of Malathion Lotion in children less than 6 years of age has not been established via well-controlled trials.

ADVERSE REACTIONS

Malathion has been shown to be irritating to the skin and scalp. Accidental contact with the eyes can result in mild conjunctivitis. It is not known if Malathion Lotion has the potential to cause contact allergic sensitization.

OVERDOSAGE

Consideration should be given, as part of the treatment program, to the high concentration of isopropyl alcohol in the vehicle. Malathion, although a weaker cholinesterase inhibitor than some other organophosphates, may be expected to exhibit the same symptoms of cholinesterase depletion after accidental ingestion orally. If accidentally swallowed, vomiting should be induced promptly or the stomach lavaged with 5% sodium bicarbonate solution.

Severe respiratory distress is the major and most serious symptom of organophosphate poisoning requiring artificial respiration, and atropine may be needed to counteract the symptoms of cholinesterase depletion.

Repeat analyses of serum and RBC cholinesterase may assist in establishing the diagnosis and formulating a long-range prognosis.

DOSAGE AND ADMINISTRATION

1. Apply Malathion Lotion on **DRY** hair in amount just sufficient to thoroughly wet the hair and scalp. Pay particular attention to the back of the head and neck while applying Malathion Lotion. Wash hands after applying to scalp.
2. Allow hair to dry naturally—use no electric heat source, and allow hair to remain uncovered.
3. After 8 to 12 hours, the hair should be shampooed.
4. Rinse and use a fine-toothed(nit) comb to remove dead lice and eggs.
5. If lice are still present after 7-9 days, repeat with a second application of Malathion Lotion.

Further treatment is generally not necessary. Other family members should be evaluated by a physician to determine if infested, and if so, receive treatment.

CLINICAL STUDIES

Two controlled clinical trials evaluated the pediculicidal activity of Malathion Lotion. Patients applied the lotion to the hair and scalp in quantities, up to a maximum of 2 fl. oz., sufficient to thoroughly wet the hair and scalp. The lotion was allowed to air dry and was shampooed with Prell shampoo 8 to 12 hours after application. Patients in both the Malathion Lotion group and in the vehicle group were examined immediately after shampooing, 24 hours after, and 7 days after for the presence of live lice. Results are shown in the following table:

Number of Patients Without Live Scalp Lice

Treatment	Immediately After	24 Hrs. After	7 Days After
Malathion Lotion	129/129	122/129	114/126
Malathion Vehicle	105/105	63/105	31/105

The presence or absence of ova at day 7 was not evaluated in these studies. The presence or absence of live lice or ova at 14 days following treatment was not evaluated in these studies.

The residual amount of malathion on hair and scalp is unknown.

HOW SUPPLIED

Malathion Lotion, USP 0.5%, is supplied in bottles of 2 fl. oz. (59 mL) NDC 42043-150-23.

Store at controlled room temperature 20° to 25°C (68° to 77°F) [see USP].

Flammable. Keep away from heat and open flame.

Distributed by: Karalex Pharma, LLC, Woodcliff Lake, NJ 07677 USA



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Rev. 08/08

PACKAGE LABEL. PRINCIPAL DISPLAY PANEL

NDC 42043-150-23

Malathion

Lotion, USP

0.5% Rx Only

In Isopropyl alcohol (78%)

terpineol, dipentene and

pine needle oil.

WARNING:

Contains flammable alcohol.

Avoid smoking, open flame and

hair dryers. Allow hair to dry

naturally and uncovered.

For topical use only.

Not for oral or ophthalmic use.

PEDICULICIDE / OVICIDE

2 fl. oz (59 mL)

Karalex Pharma, LLC

NDC 42043-150-23

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PEDICULICIDE / OVICIDE
2 fl. oz (59 mL) **Rx Only**

 Karalex
Karalex Pharma, LLC

DIRECTIONS FOR USE: See package insert for full prescribing information, particularly the section "Information for Patients."

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2. Allow hair to dry naturally - use no electric heat source, and allow hair to remain uncovered.

3. After 8-12 hours, the hair should be shampooed.

4. If lice are still present after 7-9 days, repeat with a second application of Malathion Lotion.

CAUTION: Protect the eyes from accidental exposure. If this occurs, flush immediately with water. If irritation occurs or persists, get medical attention. Harmful if swallowed.

Store at controlled room temperature 20°-25°C (68°-77°F).

See package insert for full prescribing information.

Carby-Karalex Pharma, LLC, Woodcliff Lake, NJ 07677 USA
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0.5% 15023-15023 7

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0.5 %

Malathion

Lotion, USP

NDC 42043-150-23

Malathion

Lotion, USP **0.5 %** **Rx Only**

In Isopropyl alcohol (78%), terpineol, dipentene and pine needle oil.

WARNING:
Contains flammable alcohol.
Avoid smoking, open flame and hair dryers. Allow hair to dry naturally and uncovered.

For topical use only.
Not for oral or ophthalmic use.
PEDICULICIDE / OVICIDE
2 fl. oz (59 mL)

 Karalex
Karalex Pharma, LLC

WARNING:
For external use only.
Keep out of reach of children.

CAUTION: Protect the eyes from accidental exposure. If this occurs, flush immediately with water. If irritation occurs or persists, get medical attention. Harmful if swallowed.

Store at controlled room temperature 20°-25°C (68°-77°F).

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0.5 %

Malathion

Lotion, USP

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